

CLAIMS:

1. A microwave antenna with a substrate having at least one resonant conductor track structure, characterized in that:
 - a first conductor track structure is formed by at least a first and a second conductor portion (31, 51; 32, 39, 52), which extend in a substantially meandering shape, and
 - 5 - the two conductor portions have a distance that determines the frequency distance between the first resonance frequency of the fundamental mode and the second resonance frequency for the first harmonic of the fundamental mode.
- 10 2. A microwave antenna as claimed in claim 1, characterized in that the substrate (1) substantially has the shape of a rectangular block, while the first and second conductor portions (31, 51; 32, 39, 52) forming the first conductor track structure lie on a first surface of the substrate (1), and the second conductor portion is formed along at least part of its length by a first, substantially rectangular metal surface (39; 52).
- 15 3. A microwave antenna as claimed in claim 2, characterized in that:
 - the first conductor track structure comprises at least one further (seventh) conductor portion (37) which runs over a second surface of the substrate (1) substantially parallel to the first and second conductor portions (31, 32), and
 - the frequency distance is alternatively or additionally determined through an
 - 20 adjustment of the length of the seventh conductor portion (37).
4. A microwave antenna as claimed in claim 2, characterized in that a feed terminal (40) connected to the at least one conductor track structure and having the shape of a metallization pad is provided at the second surface of the substrate (1), via which terminal the
- 25 electromagnetic energy can be fed into the antenna, and in that the antenna can be soldered with its feed terminal (40) onto a printed circuit board (100) by means of surface mounting.
5. A microwave antenna as claimed in claim 1, characterized by at least one conductor segment (41, 42) in the form of a stub line which is connected to the at least one

conductor track structure in a resonant mode in a location of great electrical or magnetic field strength, while the resonance frequency of the antenna in this resonant mode is determined by the size of the surface of this conductor segment (41, 42) substantially independently of a resonance frequency in another resonant mode.

5

6. A microwave antenna as claimed in claim 2, characterized in that a second conductor track structure (61, 62) is formed by a third conductor portion (61) and a third substantially rectangular metal surface (62) on the first surface of the substrate (1).

10

7. A microwave antenna as claimed in claim 6, characterized by a feed terminal (40) at the second surface of the substrate (1) and by a feed line (45) extending along the circumference at at least one of the first, second, and third side faces (11, 12, 13) of the substrate (1) for supplying the first and second conductor track structures (51, 52; 61, 62).

15

8. A microwave antenna as claimed in claim 7, characterized in that a first tuning stub line (53) for a first frequency band is connected to the feed terminal (40), which stub line extends as a substantially rectangular metal surface along the first side face (11) of the substrate (1).

20

9. A microwave antenna as claimed in claim 7, characterized in that a second tuning stub line (54) for a second frequency band is connected to the end of the feed line (45), which stub line extends at least along the third side face (13) of the substrate (1).

25

10. A microwave antenna as claimed in claim 6, characterized in that the first conductor track structure is provided for operating the antenna in the GSM900 or GSM1800 (DCS1800) frequency band, and the second conductor track structure is provided for operating the antenna in a 2480 MHz frequency band in accordance with the Bluetooth standard.

30

11. A printed circuit board, in particular for surface mounting of electronic components, characterized by a microwave antenna (110) as claimed in any one of the preceding claims.

12. A mobile telecommunication device, in particular for dual-band or multiband operation, characterized by a microwave antenna as claimed in any one of the claims 1 to 10.